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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/26/2003

Patrick Hosein

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EXAMINER

ELCENKO, ERIC J

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/723,805	<b>Applicant(s)</b> HOSEIN ET AL.	
	<b>Examiner</b> ERIC ELCENKO	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-9, 14-20, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 5-6, 10-13 and 21-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments have been fully considered but they are not persuasive.
2. In response to applicant's argument that Sintonen does not teach adjusting the headroom in relation to a reverse link load, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Sintonen teaches adjusting a headroom in regard to a characteristic of the signal and information known by the mobile station in regard to the signal medium transmission characteristics. It is obvious to one of ordinary skill in the art that the interference experienced in a system can be directly related to the load on a link. The larger the load that a link is holding, the more chance of interference the link will experience on both the uplink and downlink as the number of stations in communication with the base station will be larger or smaller as correlated to the interference level experienced. Therefore, changing a power headroom in accordance to a known characteristic such as interference, one of ordinary skill in the art could substitute the known teachings of Sintonen with Corazza to change a headroom based upon a known characteristic as taught in Corazza of the reverse link load indications.

Art Unit: 2617

3. In regard to Claims 24 and 25, the teaching of Raaf of the number of times a preamble is transmitted repeatedly at a maximum power is read as the system increases its transmit power to make sure a signal is transmitted. Being at a maximum power and retransmitted at that maximum power a number of times is read upon as the system has no more power to give for the transmission as it is already at the maximum available power and is limited to the maximum level associated

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,4, 7, 14-15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corazza (U.S. Pub. No. 2003/0133409) in view of Sintonen (U.S. Pub. No. 2003/0142768)

In regard to method Claim 1 and corresponding apparatus Claim 14, Corazza teaches receiving a load indication from a base station indicative of a reverse link load; *(the base stations and mobile terminals can exchange information about the reverse link including information on load. This allows the mobile terminal to determination the rate at which it will transmit based upon the available power headroom. Therefore, the load indication which changes the data rate, affects the headroom which the rate is dependent upon, Para 13-15, Abs, 18-19, 40)*

Corazza does not teach adjusting the power headroom threshold to the mobile station based on the load indication.

Sintonen teaches adjusting a power headroom level based upon interference against a signal received at the mobile station. The interference that a mobile would experience is tied into the amount of load that is occurring over a link. The higher the load the higher the interference from the other mobile stations on the same link. Therefore the amount of interference which can be based off the load indication that is sent from the base station will have a direct effect on the power headroom of the mobile station. Sintonen teaches maintaining a certain power headroom, in this case maintaining a threshold of the power headroom so there is a constant value associated to the headroom. Therefore the load indication will change the power headroom threshold so a certain headroom can be maintained.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Corazza to include the teaching of Sintonen. One of ordinary skill in the art using known methods could combine the prior art elements to yield predictable results of a power headroom threshold being changed based upon a load indication of a link that mobile station is communicating on to overcome the effect of interference on a signal.

In regard to Claims 4, 7 and 17-18, Corazza teaches receiving load indication from a base station comprises receiving a periodic load indication. *(It is inherent in order to maintain congestion control, periodic load reports must be used to keep a constant control over the loading on the reverse link. Para 13-15)*

Art Unit: 2617

In regard to Claim 15, Corazza teaching wherein the power headroom threshold limits the data transmission rate of the mobile station. (*The data rate is based upon the available power headroom, Para 13-15*)

3. Claims 2,3, and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Corazza (U.S. Pub. No. 2003/0133409) in view of Sintonen (U.S. Pub. No. 2003/0142768) in further view of Gopalakrishnann et al. (U.S. Pub. No. 2002/0110101)

In regard to Claims 2,3 and 16, the combination does not teach using an upper layer message on a common control channel.

Gopalakrishnann teaches using upper layer messages passed to the mobile on a appropriate common control channel. (Para 68)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination to include the teachings of Gopalakrishnann in order to allow for the most efficient messaging depending upon how fast and periodically the code space is changing.

4. Claims 8, 9 and 19-20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Corazza (U.S. Pub. No. 2003/0133409) in view of Sintonen (U.S. Pub. No. 2003/0142768) in view of Lakkakorpi (U.S. Pub. No. 2003/0179704)

In regard to Claim 8-9 and 19-20, the combination does not disclose calculating a weighted average of two or more load indications.

Lakkakorpi teaches the link load is determined by an exponential averaging equation with configurable weighting. Fig 5 shows the overview of the equation used over a window set of any size.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination to include the teachings of Lakkakorpi in order to provide a more reliable measurement of the load on which to base changes getting a wider margin of measurements rather than a single measurement which could be a reading where a power spike or fallout occurs giving a false reading.

5. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corazza (U.S. Pub. No. 2003/0133409) in view of Sintonen (U.S. Pub. No. 2003/0142768)in view of Raaf (U.S. Pub. No. 204/0029604)

In regard to method Claim 24 and corresponding apparatus Claim 25, Corazza teaches receiving a load indication from a base station indicative of a reverse link load; and adjusting the power headroom of the mobile station based on the load indication. *(the base stations and mobile terminals can exchange information about the reverse link including information on load. This allows the mobile terminal to determination the rate at which it will transmit based upon the available power headroom. Therefore, the load indication which changes the data rate, affects the headroom which the rate is dependent upon, Para 13-15, Abs, 18-19, 40)*

Corazza does not teach adjusting the power headroom threshold to the mobile station based on the load indication.

Sintonen teaches adjusting a power headroom level based upon interference against a signal received at the mobile station. The interference that a mobile would experience is tied into the amount of load that is occurring over a link. The higher the load the higher the interference from the other mobile stations on the same link. Therefore the amount of interference which can be based off the load indication that is sent from the base station will have a direct effect on the power headroom of the mobile station. Sintonen teaches maintaining a certain power headroom, in this case maintaining a threshold of the power headroom so there is a constant value associated to the headroom. Therefore the load indication will change the power headroom threshold so a certain headroom can be maintained.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Corazza to include the teaching of Sintonen. One of ordinary skill in the art using known methods could combine the prior art elements to yield predictable results of a power headroom threshold being changed based upon a load indication of a link that mobile station is communicating on to overcome the effect of interference on a signal.



The combination does not teach counting the number of times the mobile station is power limited for retransmission of a frame.

Raaf teaches providing for the number of retransmissions of the preamble with the maximum permissible power to be counted by a counter in step 212. (Para 45)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination to include the teachings of Raaf in order to allow for a more efficient method for changing the headroom by allowing for multiple readings of the power at a maximum before changing the headroom to allow enough power for further retransmissions.

#### ***Allowable Subject Matter***

6. Claims 5-6, 10-13 and 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2617

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIC ELCENKO whose telephone number is (571)272-8066. The examiner can normally be reached on M-F 7:30 AM through 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Elcenko/

Application/Control Number: 10/723,805

Page 10

Art Unit: 2617

/Patrick N. Edouard/

Supervisory Patent Examiner, Art Unit 2617